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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/724,960	12/01/2003	Giora Biran	FIS920030298US1	3575
23550 7590 09/18/2007 HOFFMAN WARNICK & D'ALESSANDRO, LLC 75 STATE STREET 14TH FLOOR ALBANY, NY 12207			EXAMINER WONG, XAVIER S	
			ART UNIT 2616	PAPER NUMBER
			MAIL DATE 09/18/2007	DELIVERY MODE PAPER

**Please find below and/or attached an Office communication concerning this application or proceeding.**

The time period for reply, if any, is set in the attached communication.

<b>Office Action Summary</b>	<b>Application No.</b>	<b>Applicant(s)</b>	
	10/724,960	BIRAN ET AL	
	<b>Examiner</b>	<b>Art Unit</b>	
	Xavier Szewai Wong	2616	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

#### Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

#### Status

- 1) ☒ Responsive to communication(s) filed on 20<sup>th</sup> July 2007.
- 2a) ☒ This action is **FINAL**.                      2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

#### Disposition of Claims

- 4) ☒ Claim(s) 1-3 and 5-20 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-3 and 5-20 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

#### Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

#### Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All    b) ☐ Some \*    c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
  2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

#### Attachment(s)

- |  |   |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) ✓        | 4) <input type="checkbox"/> Interview Summary (PTO-413)           |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. _____                                      |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08)          | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| Paper No(s)/Mail Date _____  | 6) <input type="checkbox"/> Other: _____                          |

### **DETAILED ACTION**

- Applicant's Amendment filed 20<sup>th</sup> July 2007 is acknowledged
- Claims 1, 8 – 13 and 15 have been amended
- Claim 4 has been cancelled
- Claims 1 – 3 and 5 – 20 are still pending in the present application
- This action is made FINAL

### ***Specification***

Amendments to the specification filed on 20<sup>th</sup> July 2007 have been acknowledged by the examiner.

### ***Claim Rejections - 35 USC § 103***

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

The factual inquiries set forth in *Graham v. John Deere Co.*, 383 U.S. 1, 148 USPQ 459 (1966), that are applied for establishing a background for determining obviousness under 35 U.S.C. 103(a) are summarized as follows:

1. Determining the scope and contents of the prior art.
2. Ascertaining the differences between the prior art and the claims at issue.
3. Resolving the level of ordinary skill in the pertinent art.
4. Considering objective evidence present in the application indicating obviousness or nonobviousness.

This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the

various claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary. Applicant is advised of the obligation under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later invention was made in order for the examiner to consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(e), (f) or (g) prior art under 35 U.S.C. 103(a).

Claims 1 – 3, 5, 6, 8 – 10 and 12 – 20 are rejected under 35 U.S.C. 103(a) as being unpatentable over **Jayam et al (U.S Pub 2003/0115337 A1)** in view of **Kagan et al (U.S Pub 2002/0152315 A1)**.

Consider claims 1, 10 and 15, **Jayam et al** clearly show and disclose a system and method that, in a TCP environment (paragraph 0015), comprise a transmit control block (Tx TCB) that has data structure to store and send requests and/or acknowledgements (ACK), as well as timer and window management information and (re)transmission information, etc. as a connection context manager does (paragraphs 0015, 0040-43; *abstract*; fig. 3). The Tx TCB also schedules packets that fit sufficient window size to the retransmit/ready queue for transmission; while packets that do not fit the window sizes are placed into a pending queue (paragraph 0047). Afterwards, in the retransmission/ready queue (managed by retransmit pointers, which are parts of the connection context as mentioned), packets wait acknowledgement from another host computer before being dequeued at the host output; while packets from the pending queue are sent out to the retransmit/ready queue as the pending read pointer indicates

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the next element to be transmitted (paragraphs 0047-48). It is also disclosed that the processes of Tx TCB is run in parallel with the host computer – transmission destination (paragraph 0059); therefore, the request handling and transmission are run in parallel.

However, **Jayam et al** *may not have explicitly* shown request events from a requester including a notification of new transmission data posted and based on the notification to schedule a connection.

In the same field of endeavor, **Kagan et al** disclose in figure 2 an HCA unit 22 (transmit request handler) is receiving descriptors (notifications of new packet) from a host (requester) through host bus 36. The host notifies the HCA when a (new) descriptor is ready by “ringing a doorbell” (paragraph 0046 lines 11-18); then based on the (new) descriptors, the HCA schedules queues for transmission (paragraph 0047-48).

Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to combine the teachings of **Kagan et al** along with **Jayam et al** in order to indicate that a particular request packet should be explicitly acknowledged.

Consider claims 2 and 16, and as applied to claims 1 and 15, **Jayam et al**, as modified by **Kagan et al**, clearly show and disclose the retransmit queue (as a ready queue) wherein pointers refer to (creating a linked list) for queue management purposes (paragraphs 0042, 0047 & 0077; figs. 5 & 6).

Consider claims **3, 14 and 17**, and as applied to claims **1, 13 and 15, Jayam et al**, as modified by **Kagan et al**, clearly show and disclose a transmit control block (Tx TCB) that has data structure to store and send requests and/or acknowledgements (ACK), as well as timer and window management information and (re)transmission information, etc. for each connection as a connection/flow context manager does (paragraphs *0015, 0040-43 & 0059; abstract; fig. 3*).

Consider claim **5**, and as applied to claim **1, Jayam et al**, as modified by **Kagan et al**, clearly show and disclose a request to send acknowledgement – ACK (paragraphs *0051 & 0055*).

Consider claim **6**, and as applied to claim **1, Jayam et al**, as modified by **Kagan et al**, clearly show and disclose a request to update transmit window (paragraphs *0051 & 0056*).

Consider claims **8 and 20**, and as applied to claims **1 and 15, Jayam et al**, as modified by **Kagan et al**, clearly show and disclose means for a transmit network protocol processor (Tx NPP – as queue manager) within the system that detects a timer expiration for a retransmit/ready queue (paragraphs *0054 & 0065; figs. 6 & 8*).

Consider claim **12**, and as applied to claim **10, Jayam et al**, as modified by **Kagan et al**, clearly show and disclose that in the retransmission/ready queue (managed by retransmit pointers, which are part of the connection context as mentioned), packets waits acknowledgement from another host computer before being dequeued at the host output; while a packet from the pending queue is sent out to the retransmit/ready queue

as the pending read pointer indicates the next element to be transmitted (paragraphs 0047-48).

Consider claims 9, 13 and 19, and as applied to claims 1, 10 and 15, **Jayam et al**, as modified by **Kagan et al**, clearly show and disclose means for dequeuing process of a TCP transmitting system (paragraph 0040) includes the steps of: handling timeouts (paragraphs 0045 & 0065); means for deciding the packets to be retransmitted (paragraph 0066; claims 5 & 6); means for retransmitting request along with Tx TCB pointer as commands being sent to header preparation processor to prepare/build a header for the packet for transmission (paragraphs 0062 & 0068); and tracking/recording information of a previously transmitted portion of data (paragraph 0034; claims 1, 2, 5 & 6); and means for starting the retransmit timer after the timer expires (therefore, inherently restarted) after data has been transmitted (paragraph 0054).

Claims 7, 11 and 18 rejected under 35 U.S.C. 103(a) as being unpatentable over **Jayam et al** (U.S Pub 2003/011537 A1) in view of **Kagan et al** (U.S Pub 2002/0152315 A1), as applied to claims 1, 10 and 15, and in further view of **Buskens et al** (U.S Patent 5,905,871).

Consider claims 7, 11 and 18, and as applied to claims 1, 10 and 15, **Jayam et al**, as modified by **Kagan et al**, clearly show and disclose a TCP transmission system and method wherein request events consist of:

- I. request to send acknowledgement (ACK); (paragraphs 0051 & 0055)

II. request to update transmit window; (paragraphs 0051 & 0056)

III. read and write pointers that count the number of packets in a transmit queue at any given time (when new messages arrive as well) and decide whether or not the message should be scheduled for transmission (paragraphs 0044 & 0047); therefore, acting as notification of new transmission data posted request as the applicants mention its functions in the specifications.

However, **Jayam et al**, as modified by **Kagan et al**, did not explicitly mention an incoming acknowledgement request.

In the same field of endeavor, **Buskens et al** disclose an incoming ACKnowledgement message request is received for a scheduler for a buffer queue (col. 6 lines 45-65; figs. 3 & 4).

Therefore, it would have been obvious to a person of ordinary skill in the art at the time of the invention was made to incorporate the teachings of an incoming acknowledgement request as taught by **Buskens et al**, in the system and method of **Jayam et al**, as modified by **Kagan et al**, in order to be notified to update window parameters and process retransmission requests.

### ***Response to Arguments***

Applicant's arguments with respect to claims 1, 10 and 15 have been considered but are moot in view of the new ground(s) of rejection.



**Conclusion**

The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

A. **Benson et al (U.S Patent 6,151,321)** mention queue scheduling and linked list connections in an ATM network

B. **Samuels et al (U.S Pub 2005/0005024 A1)** mention Path Maximum Transmission Unit (PMTU) discovery in a TCP downstream process

Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, This action is made **FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

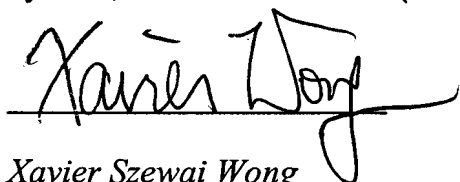
A shortened statutory period for reply to this final action is set to expire **THREE MONTHS** from the mailing date of this action. In the event a first reply is filed within **TWO MONTHS** of the mailing date of this final action and the advisory action is not mailed until after the end of the **THREE-MONTH** shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than **SIX MONTHS** from the date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Xavier Wong whose telephone number is 571-270-1780. The examiner can normally be reached on Monday through Friday 8 am - 5 pm (EST).

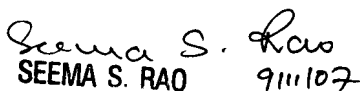
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If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Seema Rao can be reached on 571-272-3174. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.



Xavier Szewai Wong  
X.S.W / x.s.w  
4<sup>th</sup> SEPTEMBER 2007

  
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